Zheyuan (Charles) Xu

470-363-0251 | xuzheyuan961124@gmail.com | github.com/CharlesXu1124 | charlesxu1124.github.io

Education

University of Washington
MS in Computer Science (research on policy gradient methods) GPA: 3.92 — *Sep 2020 - Dec 2021*

Georgia Institute of Technology
BS in Computer Science and Electrical Engineering (intelligence and theory thread) — *Aug 2015 – May 2020*

Technical Skills

Languages: Python, C++, C#, SQL, JavaScript, HTML, Dart, Swift, Java, Matlab, Rust
Frameworks: Unity, Flutter, Node.js, Three.js, Flask, RabbitMQ, ROS, GCP, Azure, AWS, Docker
Libraries: Pytorch, Tensorflow, pandas, numpy, numba
Skills: reinforcement learning (on-policy methods), supervised (CV & NLP) and unsupervised learning (clustering, boosting, autoencoders)

Experience

ADAS/AD Stack Software Engineer — Jan 2022 – present
U Power Robotics — *Sunnyvale, CA*

Machine Learning Intern (remote) — Oct 2021 – Dec 2021
Mavenir Systems Inc. — *Richardson, TX*

- Worked on RAN-in-Cloud project that optimizes throughput and latency with reinforcement learning
- Worked on an RD robotics project that incorporates computer vision and advanced planning algorithms in grocery automation

Machine Learning Intern — June 2021 – Sep 2021
RATLab LLC (Startup) — *Seattle, WA*

- Developed adaptive algorithms for the consumer electronic product with Tensorflow and Pytorch in Python
- Deployed the trained network on edge devices by using C++, achieved more than 85% classification accuracy in breathing recognition

Research Assistant — Jan 2020 – Aug 2020
GTSR Lab — *Atlanta, GA*

- Designed the mechatronics system for GT-MAB 2.0 in Solidworks and Eagle CAD
- Optimized the firmware, and reduced communication latency by more than 150 times with C++
- Co-invented two patents, co-authored paper was awarded "Best Student Paper Award" in AIM 2021

Selected Projects

A.R.M.S. | *Remote warehouse management app deployed on mixed-reality devices* — Aug 2021-present

- Built a digital twin of Dofbot in Unity, trained an autonomous grabbing agent with ML agents and reinforcement learning(PPO)
- Allowed real-time control of robotic arm over cloud, as well as streaming of sensor data from the robot to mixed-reality glass via cloud AMQP message broker.

Gym-dofbot(Primary contributor) | *An open-sourced Gym simulation environment* — July 2021

- Enabled real-time video streaming by using Bullet physics engine and URDF configuration file
- Allowed multi-agent training, servo group control and position control via inverse kinematics in Python

GAIA System | *A 3D web app for monitoring natural disasters and monitoring rescue missions* Feb 2021–Apr 2021

- Animated the frontend by using Three.js, webGL, HTML and CSS
- Implemented real-time information visualization by using Azure VM, RabbitMQ and GCP BigQuery

AdaEye | *A voice-controlled navigation and cognitive app for visually impaired* — Feb 2021

- Designed the frontend in Swift, allowing voice-only login, registration and scan of surroundings
- Enabled voice control of camera gimbal with RabbitMQ on Azure VM
- Built a chatbot on the frontend, enabling voice query and answer by integrating GPT-3 and AVFoundation

Neomap | *An iOS mixed-reality app for share your new year resolution and relive your older memories* — Dec 2020

- Enabled gesture control to user posts by integrating gesture detection and Reality Kit in Swift
- Allowed user authentication, data storage and retrieval by integrating Firebase

Awards and Honor

Best Use of Google Cloud - MakeHarvard 2021
Best Use of Google Cloud and Radar.io Most Creative Award - MLH New Year New Hack 2021